WARRIOR RIDGE DAM
American Hydro Power Company
Spanning Frankstown Branch of the Juniata River
Petersburg vicinity
Huntingdon County
Pennsylvania

HAER No. PA-377

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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HISTORIC AMERICAN ENGINEERING RECORD

WARRIOR RIDGE DAM
American Hydro Power Company

HAER No. PA-377

Location:	On Frankstown Branch of the Juniata River, 2 mi. S of Petersburg, Petersburg (vic.), Huntingdon County, Pennsylvania
Date of Construction:	1906
Present Owner:	American Hydro Power Company.
Present Use:	Dam and hydroelectric plant.
Significance:	The Ambursen Hydraulic Construction Company, a major dam builder in the United States in the early twentieth century, designed and built the dam. As one of the earliest examples of a covered version of a buttressed hollow-core dam, patented by Ambursen in 1904, the facility at Warrior Ridge was the focus of widespread attention in the engineering press.
Historian:	Gray Fitzsimons, 1991.

Project Information:
The results of the study of Westmoreland County were published in Nancy S. Shedd, Huntingdon County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (Washington, D.C.: National Park Service, 1991). The contents of the publication were transmitted to the Library of Congress as individual reports. Research notes, field photos and copies of historic photos collected during the project were transmitted to the AIHP Collection, Special Collections, Stapleton Library, Indiana University of Pennsylvania, Indiana, PA 15705.

This low-head hydro development on the Frankstown Branch of the Juniata River, between Petersburg and Huntingdon, includes the Warrior Ridge dam, a power-generating plant, four houses, and a building that reportedly served as a church. Main Dam (1905-07): a 400' long, 27' high, hollow dam of reinforced concrete, with 1'-high plank flash boards, extends between the power plant on the north side of the river and the steep slope of Warrior Ridge on the south. Auxiliary Dam (1907): a 110' long dam of the same design and materials extends north from the power plant across an area washed out by high water while main dam was being built. Power Plant (1906-07): a major portion of the plant was demolished in 1978, but the original arrangement of buildings and operations is visible.

The headgates extend along the east face of the power plant and the five generator units are exposed to the elements. Below the generators are the turbines, only one of which dates from the original construction. This is generator No. 3, manufactured by S. Morgan Smith in 1906. The four other generators date from 1966 and were manufactured by James Leffel & Company of Springfield, Ohio. The original turbines had been damaged in the diastrous Agnes Hurricane flood of 1972 and the Leffel turbines were installed at the Warrior Ridge plant in the early 1980s, having been purchased from the Appleton Paper Company's plant in Appleton, Wisconsin. Each generator is rated at 3-megawatts.

In addition to the hydro plant, a steam plant was erected near the dam. Only foundations of this steam plant remain. A concrete railroad trestle that supplied coal to the steam plant is now planked for vehicle access. Four Company Houses (1907): three frame bungalows, measuring 30' x 25', have first stories of German siding and second stories of wood shingles, with asphalt shingle roofs and reinforced-concrete foundations. One two-story, four-bay double house has German siding, an asphalt roof, and a concrete foundation. The houses have been privately owned since 1952. The bungalows are no longer identical in every detail, but their original character is still apparent. All are very well maintained. Church (1910s): this 18' x 15', one-story frame building with a concrete foundation and floor and an asphalt roof, is currently used to treat water for the houses.

This dam and power plant are located in a gap through Warrior Ridge and were constructed between 1905 and 1907 for the Juniata Hydro-Electric Company of Philadelphia. William H. Cushman, chief engineer for Juniata Hydro-Electric, designed the power house and hydraulic installation. A. G. Wood, a consulting engineering from Philadelphia, planned the auxiliary coal-fired steam plant. It is somewhat unusual for a hydro-electric plant also to contain a steam plant; however, the wide fluctuation in the river's flow led to the addition of the steam auxiliary plant

so as to ensure electricity during dry periods. The General Electric Company designed the electrical installation and manufactured the generators and electrical equipment. While the plan called for six generator hydro-turbines, only four were installed initially. Each turbine unit consisted of a pair of 39" S. Morgan Smith wheels that operated at 200 rpm and had a 1,000-horsepower capacity. Direct-connected to each turbine was a General Electric 50-kilowatt, 3-phase, 60-cycle AC generator. The steam plant contained four boilers used with two GE 500-kilowatt Curtis two-stage vertical turbo-generators.

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The plant, which had a total capacity of 8,000 horsepower, contracted to distribute power to Huntingdon, Altoona, Tyrone, and other surrounding communities. Local newspapers reported the Huntingdon Gas and Electric Company's switch to AC power in order to utilize electricity from the new dam. Because of the power plant's remote location, the tiny community of Warrior Ridge was created so that employees could live near their work. The 1910 census enumerated a superintendent, operator, and two "stationary firemen" in residence, with two powerhouse laborers boarding a short distance away. A number of railroaders occupied a small settlement on the other side of the tracks, and eventually a railroad flag stop was established at Warrior Ridge, and a small passenger station built. The power company provided free electricity and water to residents of the company houses. The small frame building now used to treat water for the town is said to have been built about 1918 as a community church.

The entire complex was acquired in 1911 by the Pennsylvania Hydro Electric Company, when Juniata Hydro was unable to satisfy its mortgages. In 1927, the power plant and dwellings were purchased by the Pennsylvania Electric Company (Penelec), which operated both the hydro- and steam-generating facilities until 1952. At that time, the steam plant was closed and the company houses sold to individual owners. Penelec retained only the hydro-electric facility.

In the 1972 Agnes Flood most of the plant's turbines and other equipment was destroyed. It stood idle, and high estimates on the cost of rehabilitation caused the company to consider removing the dam, an alternative that would have required complete restoration of the inundated area to its former condition. Finally, in 1979 Penelec began a rehabilitation

project, which was abandoned due to the expense of the accident at Three Mile Island. In 1984, American Hydro Power Company purchased the plant from Penelec. The terms of the sale included an agreement that Penelec would purchase the power generated by the 2.8-megawatt station. After restoration the plant was brought back on line in 1985.

Sources:

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